DOCUMENT RESUME

ED 273 829 CE 045 070

AUTHOR Sipiorski, James; Spike, Peter

TITLE Linear Classification of Dairy Cattle. Slide Script.

INSTITUTION Ohio State Dept. of Education, Columbus. Agricultural Education Service.; Ohio State Univ., Columbus. Agricultural Curriculum Materials Service.
REPORT NO AGDEX-410/46
PUB DATE 85
NOTE 15p.; Photographs may not reproduce well.
AVAILABLE FROM Ohio Agricultural Education Curriculum Materials Service, 2120 Fyffe Road, Room 254, Columbus, OH 43210-1099 ($1.50; slides and script--$22.00).
PUB TYPE Guides - Classroom Use - Guides (For Teachers) (052)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Agricultural Education; Agricultural Production; Agricultural Skills; *Animal Husbandry; *Classification; Classroom Techniques; *Dairy Farmers; Learning Activities; *Livestock; Postsecondary Education; Scripts; Secondary Education; *Vocational Education
IDENTIFIERS *Dairy Cattle Production

ABSTRACT

This slide script, part of a series of slide scripts designed for use in vocational agriculture classes, deals with principles of the linear classification of dairy cattle. Included in the guide are narrations for use with 63 slides, which illustrate the following areas that are considered in the linear classification system: stature, strength, body depth, angularity, rump, rear legs and foot angle, udder traits, and teat placement. The introduction to the script also includes a brief discussion of the 50-point linear classification scale. (MN)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED273829

LINEAR CLASSIFICATION OF DAIRY CATTLE

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

Minor changes have been made to improve reproduction quality

Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

Ohio Ag Ed Curric
Molly Service
R Roeber

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CE 045070

James Sipiorski **Peter Spike**

OHIO AGRICULTURAL EDUCATION CURRICULUM MATERIALS SERVICE

Agricultural Education Service
State Department of Education

and

Department of Agricultural Education
The Ohio State University

FOREWORD AND ACKNOWLEDGMENTS

Linear classification is the modern tool used to describe dairy cattle. It has been adopted by all breeds and artificial insemination (AI) organizations in the U.S. in order to achieve the goal of greater uniformity of programs than has ever existed. Minor variations include the number of traits considered and specific scales of measure, but the basic premise and practices are the same. Some breeds refer to functional-type traits appraisal with scores from 50 to 100 points, while others refer to linear classification with scores from 0 to 50. Some AI units use a range of 0 to 9, but each of their points encompasses 5 of the breed points and uses the same definitions and standards.

In 1985 the National FFA Contests incorporated linear classification principles into their dairy cattle contest. To establish a standard for use in the contest, the 15 primary traits used by the Holstein Association were chosen. This slide series depicts the variation and appropriate scores in each of these traits. The slides and development of the script were provided by: James Sipiorski, Dairy Program Coordinator of Wisconsin MABC-SS Cooperative, Inc.; Select Sires of Plain City, Ohio; and Peter Spike, Associate Professor of Dairy Science at The Ohio State University. Art work for the cover and the graphic slides was done by Jerry King.

Project coordinator at Curriculum Materials Service was Roger Roediger. Editing and layout was done by Muriel King. Phototypesetting was done by Jacqueline A. Stuts.

Principles of Linear Classification

Each physical trait is evaluated on a 50-point scale from one extreme to the other. While specific measurements may be used as guidelines for standards, classifiers do not actually measure most traits. However, they do rate each trait within the scale of physical extremes. The Holstein Association* has developed useful drawings for each trait to explain these differences. Similar to these are the drawings seen on the following slides which are supplemented and expanded with explanations. These slides should be useful to those who need explanations as well as drawings to visualize differences.

Final classification scores for cows are not necessarily related to the linear scores. Of course certain values are associated with more desirable traits. However, the linear system simply describes the traits from one extreme to the other. Summary of these data by sire groups provides valuable genetic information for dairymen to use in making decisions about mating their cows. Understanding linear scoring helps dairymen evaluate their cows and then make better use of the information in these sire summaries.

---

*_Linear-Holstein Association Linear Classification Program_, Holstein Association, 1 South Main Street, Brattleboro, VT 05301 (1983)

CONTENTS

	page
Stature	1
Strength	2
Body Depth	3
Angularity	3
Rump	4
Rear Legs and Foot Angle	6
Udder Traits	7
Teat Placement	10

James E. Cummins, Director
Agricultural Education Service
State Department of Education

Roger D. Roediger, Director
Ohio Agricultural Education
Curriculum Materials Service

Copyright ©, 1985

Ohio Agricultural Education Curriculum Materials Service
The Ohio State University

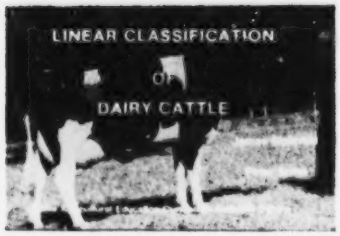
All rights reserved

Ohio Agricultural Education Curriculum Materials Service
The Ohio State University
Room 254, 2120 Fyffe Road
Columbus, Ohio 43210

1985

The Ohio Agricultural Education Curriculum Materials Service, as a part of The Ohio State University, is an equal opportunity employer and does not discriminate against any individual for reasons of race, color, creed, religion, national origin, or sex. All instructional materials provided by the Ohio Agricultural Education Curriculum Materials Service are available on a non-discriminatory basis without regard to race, color, creed, religion, national origin, or sex.

LINEAR CLASSIFICATION OF DAIRY CATTLE

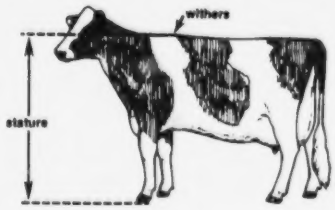


1. Title slide

LINEAR CLASSIFICATION TRAITS

- **Stature**
- **Strength**
- **Body Depth**
- **Angularity**
- **Rump Angle and Length**
- **Rear Legs and Foot Angle**
- **Udder Attachments and Depth**
- **Teat Placement**

2. Linear classification deals with the following traits: stature, strength, body depth, angularity, rump angle and length, rear legs and foot angle, udder attachments and depth, and teat placement.



Stature

3. Stature is measured as the height of the cow at the withers; that is, from the ground to the top of the withers. The ratings vary greatly from one breed to another - one of the most obvious trait differences. For example, a 51-inch measurement for a Jersey would give it an extremely tall rating, while for a Holstein the same measurement would give a rating of extremely short.

STATURE RATINGS

Tall	59 inches or more	45 points or more
Intermediate	55 inches	25 points
Short	51 inches or less	5 points or less

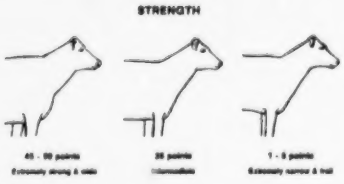
4. Stature ratings for a Holstein are:

Tall	59 inches or more	45 points or more
Intermediate	55 inches	25 points
Short	51 inches or less	5 points or less

5. This tall Holstein cow would be scored 45 . . .

6. . . . while this Holstein cow would be 25, an intermediate score.

7. This short Holstein cow would be scored 5.



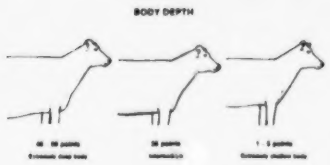
Strength

8. Strength incorporates width and depth of chest and substance of bone especially about the front end.

9. This cow would be considered a 45 . . .

10. . . . while this more intermediate cow is a 25.

11. This rather frail cow is near the other extreme and coded 5.



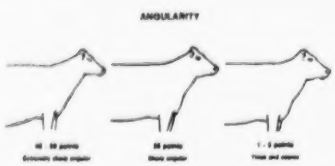
Body Depth

12. Body depth reflects the depth at the middle of the cow's body, primarily the rib cage.

13. This very deep cow would be rated 45.

14. This intermediate cow would be rated 25.

15. This shallow cow would rate near the other extreme - 5.



Angularity

16. Angularity includes several features besides the obvious angle formed over the withers. Receiving additional consideration are flatness of bone, openness of ribs, and length of neck.

17. This cow exhibits extreme angularity - very sharp over the withers and open about her ribs. She would be scored 45.

18. This thicker cow would be intermediate at 25, . . .

19. . . . while this extremely thick cow would be rated 5.

Rump

20. The ***angle of the rump*** is evaluated by the slope from hooks to pins. There is a direct relation between rump angle and reproductive performance in dairy cattle. Improper rump angle interferes with drainage of the reproductive tract.

21. This extremely sloped rump would be scored 45.

22. This rump is more nearly level and would be scored 30.

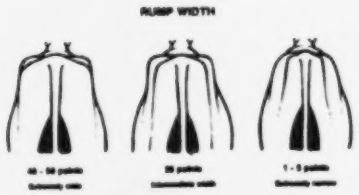
23. The reverse tilt in this rump with the pins clearly higher than the hooks would be scored 15.

24. ***Rump length*** is closely related to overall body length. Again using a side view, one evaluates the cow for the distance from hooks to pins.

25. A long rump like this would be scored 45; . . .

26. . . . an intermediate-length rump 25; . . .

27. . . . and a very short rump 10.



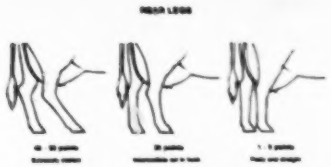
28. ***Rump width*** relates to calving ease with wider rumps associated with easier delivery of the calf. Rump width is determined by the width between the hooks, the pins and the thurls.

29. The very wide pelvic area shown is scored 45; . . .

30. . . . the intermediate - 25; . . .

31. . . . and the narrow - 5.

Rear Legs (Side View) and Foot Angle

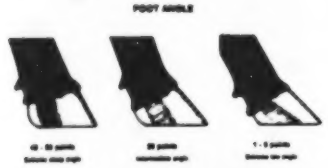


32. Durability of the legs and feet is related to the amount of set to the hock. The ***degree of angle to the leg*** is evaluated from the side view. Legs with a great deal of set (or highly sickled) receive a high value. A straight (posty) leg is rated very low.

33. The highly sickled legs of this cow would be scored 45.

34. The intermediate set is scored 25 . . .

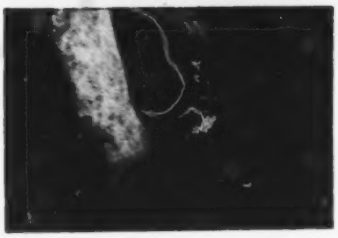
35. . . . and this straight (posty) leg is rated 5.



36. ***Foot angle*** is related to durability and the frequency of needed foot trimming. Cows need well formed feet for good mobility. Condition of the feet is related to the general health of the cow. Foot angle is measured as the angle formed by the front of the foot and the floor.

37. Extremely steep foot angles warrant a score of 45.

38. Intermediate foot angles receive a rating of 25.



39. This very low angle is scored 5.

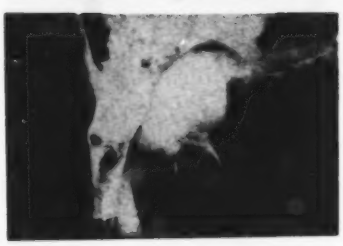
FORE ATTACHMENT OF THE UDDER

Udder Traits

40. ***Fore attachment*** is evaluated as the strength of attachment to the body wall by the lateral ligaments.

41. This extremely tight attachment is rated 45.

42. This attachment is intermediate, rated 25.



43. This extremely broken attachment would receive a rating of 5 or less.

HEIGHT OF REAR UDDER

44. ***Height of rear udder*** is an indication of potential udder capacity. The attachment is measured at the junction of the skin folds separating the udder and the inner rear leg. A high rear udder brings a high evaluation.

45. This very high rear udder demonstrates a score of 45; . . .

46. . . . this intermediate one is rated 25.

47. This rear udder does not go very high and is rated 5.

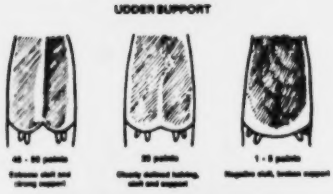
WIDTH OF REAR UDDER

48. ***Width of rear udder*** is also an important indicator of a cow's potential capacity for milk production.

49. This wide rear udder earns a rating of 45 . . .

50. . . . and the intermediate - 25.

51. This very narrow attachment is rated 5.

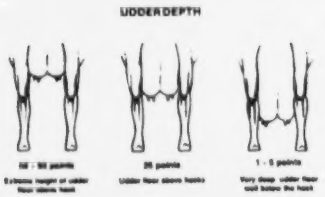


52. ***Udder support*** - The main support for the udder is the median suspensory ligament. The external evidence of the median ligament is the cleft and clearly defined halving. Proper support keeps the teats placed properly under the udder and insures that the udder is properly held, reducing potential for injury.

53. This extreme cleft, giving strong support, is rated 45.

54. This udder shows clearly defined halving and is rated 25.

55. This very flat udder would receive a very low score of 5.

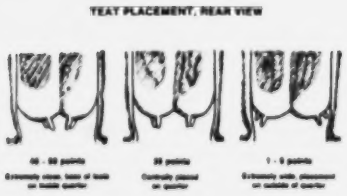


56. ***Udder depth*** is measured relative to the hock. Udder floor is measured at the base of the teat. A shallow udder with udder floor extremely high above the hocks receives the highest score.

57. This shallow udder receives a score of 45.

58. An intermediate udder is rated 25 when it is 2 inches above the point of the hock.

59. This deep udder is below the hocks and would be scored about 10.

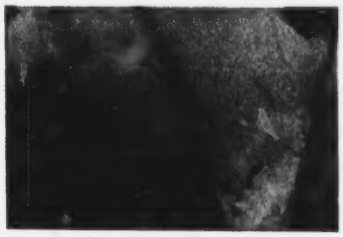


Teat Placement

60. Teat placement is evaluated from the rear view. It is related not only to ease of milking but also to susceptibility to injury.

61. Extremely close teat placement with the base of the teat on the inside of the quarter rates a score of 45.

62. Teats that are centrally placed under the quarter receive a rating of 25.



63. Extremely wide placement to the outside of the quarters warrants a low rating of 5. This can be seen even in this side view.